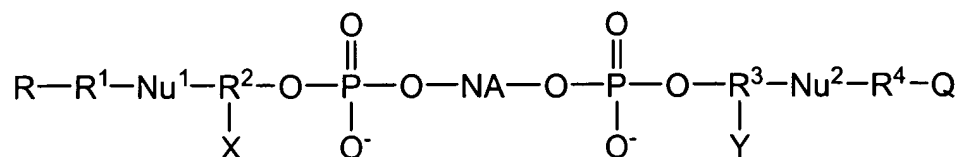


**Listing of Claims:**

1-31. (Canceled)

32. (Previously Presented) A compound having the formula



wherein,

NA is a nucleic acid chain comprising nucleic acid monomers selected from the group consisting of natural nucleic acids, modified nucleic acids and combinations thereof;

R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup> are linker moieties independently selected from the group consisting of substituted or unsubstituted alkyl and substituted or unsubstituted heteroalkyl;

Nu<sup>1</sup> and Nu<sup>2</sup> are members independently selected from the group consisting of nucleotide residues and nucleoside residues;

R is a molecular energy transfer donor;

Q is a molecular energy acceptor; and

X and Y are the same or different and are non-nucleic acid stabilizing moieties that interact to bring R and Q into operative proximity, thereby enabling transfer of energy from R to Q.

33. (Previously Presented) The compound according to claim 32, wherein said molecular energy transfer donor is a fluorophore.

34. (Previously Presented) The compound according to claim 32, wherein said molecular energy acceptor is a fluorescence quencher.

1                   35.     (Previously Presented) The compound according to claim 32,  
2     wherein X and Y are both hydrophobic moieties.

1                   36.     (Previously Presented) The compound according to claim 35,  
2     wherein X and Y are members independently selected from the group consisting of  
3     saturated hydrocarbons, unsaturated hydrocarbons, steroids, fatty acids, fatty alcohols and  
4     hydrophobic peptides.

1                   37.     (Previously Presented) The compound according to claim 32,  
2     wherein natural nucleic acids are members selected from the group consisting of  
3     deoxyribonucleotides, ribonucleotides and combinations thereof.

1                   38.     (Previously Presented) The compound according to claim 37,  
2     wherein said modified nucleic acids are peptide nucleic acids.

1                   39.     (Previously Presented) The compound according to claim 32,  
2     wherein said nucleic acid monomers are joined by linkages that are members  
3     independently selected from the group consisting of phosphodiesters and modified  
4     phosphodiesters.

1                   40.     (Previously Presented) The compound according to claim 39,  
2     wherein said modified phosphodiesters are members selected from the group consisting  
3     of phosphorothioates and phosphoramidates.

1                   41.     (Previously Presented) The compound according to claim 32,  
2     wherein said nucleic acid chain further comprises a hybridization enhancing moiety.

1                   42.     (Previously Presented) The compound according to claim 41,  
2     wherein said hybridization enhancing moiety is a member selected from the group  
3     consisting of intercalating agents, minor groove binders and modified exocyclic bases.

1                   43.     (Previously Presented) The compound according to claim 32,  
2     wherein X and Y are independently attached to members selected from the group  
3     consisting of a natural base of said nucleic acid chain, a modified base of said nucleic  
4     acid chain, a 3'-hydroxyl group of said nucleic acid chain, a 5'-hydroxyl group of said  
5     nucleic acid chain, a 2'-hydroxyl group of said nucleic acid chain, and a linkage joining  
6     nucleic acid groups in said nucleic acid chain.

1                   44.     (Previously Presented) The compound according to claim 32,  
2     wherein said compound is immobilized on a solid surface.

1                   45.     (Previously Presented) A method for amplifying a polynucleotide,  
2     wherein a compound according to claim 32 is a primer in said method, said method  
3     comprising:

- 4                   (a) hybridizing said primer to said polynucleotide; and  
5                   (b) amplifying said polynucleotide.

1                   46.     (Previously Presented) The method according to claim 45,  
2     wherein said amplifying is a member selected from the group consisting of polymerase  
3     chain reaction (PCR), nucleic acid sequence based amplification (NASBA), strand  
4     displacement amplification (SDA) and combinations thereof.

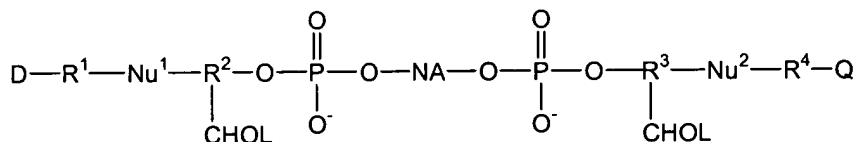
1                   47.     (Previously Presented) A method for detecting or quantitating a  
2     nucleic acid, wherein the compound according to claim 32 is used as a probe, said  
3     method comprising:

- 4                   (a) hybridizing said compound to said nucleic acid; and  
5                   (b) detecting a change in fluorescence of said compound, thereby  
6     detecting or quantitating said nucleic acid .

48. (Previously Presented) The method according to claim 47,  
wherein said method comprises a member selected from the group consisting of 5'-  
nuclease assay, rolling circle amplification and combinations thereof.

49. (Previously Presented) A kit for quantitating nucleic acid, said kit  
comprising a compound according to claim 32.

50. (Previously Presented) A compound having the formula:



wherein,

CHOL is a cholesterol derivative;

$\text{R}^1$ ,  $\text{R}^2$ ,  $\text{R}^3$  and  $\text{R}^4$  are linker moieties independently selected from the  
group consisting of substituted or unsubstituted alkyl and  
substituted or unsubstituted heteroalkyl;

$\text{Nu}^1$  and  $\text{Nu}^2$  are members independently selected from the group  
consisting of nucleotide residues and nucleoside residues;

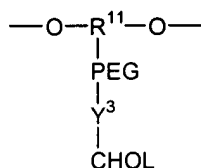
NA is a nucleic acid sequence;

D is a donor of light energy; and

Q is a quencher of light energy,

wherein the CHOL moieties interact to bring D and Q into operative  
proximity, thereby enabling transfer of energy from D to Q.

51. (Previously Presented) The compound according to claim 50,  
wherein  $\text{R}^1$  and  $\text{R}^2$  are independently selected and have structures according to the  
formula:



wherein,

$R^{11}$  is a member selected from the group consisting of substituted or unsubstituted alkyl and substituted or unsubstituted heteroalkyl;

PEG is polyethylene glycol;

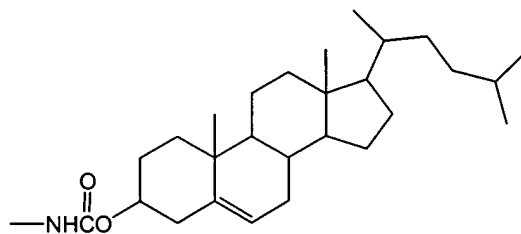
$Y^3$  is an organic functional group adjoining said PEG to said CHOL.

52. (Previously Presented) The compound according to claim 51, wherein said PEG has from about 2 to about 20 ethylene glycol subunits.

53. (Previously Presented) The compound according to claim 51 in which  $R^{11}$  is substituted or unsubstituted alkyl.

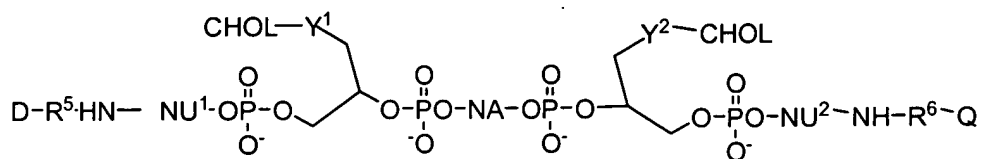
54. (Previously Presented) The compound according to claim 53, wherein  $R^{11}$  is  $C_1$ - $C_6$  substituted or unsubstituted alkyl.

55. (Previously Presented) The compound according to claim 51, wherein  $Y^3$ -CHOL has the structure:



56. (Previously Presented) The compound according to claim 50, wherein  $Nu^1$  and  $Nu^2$  are nucleotides having an exocyclic amine group to which  $-R^1$ -D and  $-R^4$ Q are attached, respectively.

57. (Previously Presented) A compound having the formula:



wherein,

NA is a nucleic acid sequence;

Nu<sup>1</sup> and Nu<sup>2</sup> are members independently selected from the group

consisting of nucleotide residues and nucleoside residues;

Y<sup>1</sup> and Y<sup>2</sup> are linking groups independently selected from the group

consisting of substituted or unsubstituted alkyl and substituted or

unsubstituted heteroalkyl;

R<sup>5</sup> and R<sup>6</sup> are linking groups independently selected from the group

consisting of substituted or unsubstituted alkyl and substituted or

unsubstituted heteroalkyl;

D is a donor of light energy; and

Q is a quencher of light energy,

wherein each CHOL interacts with the other CHOL to bring D and Q into

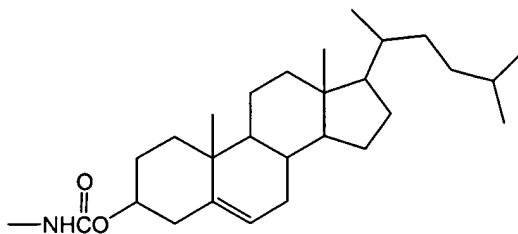
operative proximity, thereby enabling transfer of energy from D to Q.

58. (Previously Presented) The compound according to claim 57,  
wherein Y<sup>1</sup> and Y<sup>2</sup> are members independently selected from substituted or unsubstituted  
heteroalkyl.

59. (Previously Presented) The compound according to claim 58,  
wherein Y<sup>1</sup> and Y<sup>2</sup> are polyethylene glycol.

60. (Previously Presented) The compound according to claim 59,  
wherein said polyethylene glycol has from about 2 to about 20 ethylene glycol subunits.

61. (Previously Presented) The compound according to claim 57, wherein  $Y^1$ -CHOL and  $Y^2$ -CHOL have the structure:



62. (Previously Presented) The compound according to claim 57, wherein  $\text{Nu}^1$  and  $\text{Nu}^2$  are nucleotides having an exocyclic amine group to which  $\text{—R}^5\text{—D}$  and  $\text{—R}^6\text{Q}$  are attached, respectively.